one embodiment, the map server **110** provides subsets of the map data in response to queries for data received via the network **114**. For example, the map server **110** can receive a query asking for a certain type of satellite imagery centered on a specified latitude/longitude and provide the requested data in response. In one embodiment, the map server **110** provides image data that illustrate the map. In another embodiment, the map server **110** provides raw data that a requestor can use to create a map.

[0020] A metrics server **112** stores and provides metrics data describing metrics for the geographic regions described by the map data. The metrics data are static or dynamic and generally describe attributes of the map data. These attributes can include statistical and/or demographic information. For example, the map data can describe the streets of a city while the metric data describe traffic congestion on the streets. Likewise, the metrics data can describe weather conditions, political boundaries and other locations not contained in the map data, such as school districts, locations of businesses and public transportation, etc. Many different types of metrics data are described below, and different embodiments of the metrics server **112** can provide different metrics data. In some embodiments, the map server **110** and metrics server **112** are combined.

[0021] In one embodiment, the metrics server **112** stores and provides a set of templates describing what metrics to display on a map and how to display them. A template identifies one or more metrics and, for each metric, states one of a variety of different techniques to use to represent the metric on the map. For example, a template can identify a crime rate metric, and state that the crime rate for a given region on a map should be described using a numeric value between 1 and 10. Likewise, a template can specify a location on a map and state that the distance from the center of the currently-displayed map to the location be represented using a vector arrow. Another template can combine the two metrics and techniques described above, e.g. display both the crime rate and distance to the specified location.

[0022] In one embodiment, at least some metrics data and/or templates stored by the metrics server **112** are provided by end-users of the clients **116**. Additionally, in some embodiments there are multiple metrics servers **112**. For example, a metrics server **112** can be dedicated to providing certain types of metrics, such as environmental data or data describing public schools. In one embodiment, at least some templates are provided by a server other than the metrics server **112**, such as a dedicated template server or a third party server.

[0023] A client **116** is a computer utilized by an end-user to communicate with the map server **110**, metrics server **112**, and/or other computers on the network **114**. The computer, for example, is a personal computer executing a web browser such as MICROSOFT INTERNET EXPLORER or MOZILLA FIREFOX, that allows the end-user to retrieve and display content from web servers and other computers on the network **114**. In other embodiments, the client **116** is a network-capable device other than a personal computer, such as a personal digital assistant (PDA), a cellular telephone, a pager, an in-vehicle navigation system, a television "set-top box" etc. Although FIG. **1** illustrates three clients **116**, embodiments of the present invention can have thousands or millions of clients.

[0024] In one embodiment, the client executes a mapping engine **118** that provides an end-user with the ability to specify a geographic location and obtain a map for the location from the map server **110**. In addition, the end-user specifies one or more active templates for displaying metrics on the map by selecting a template stored by the metrics server **112** or creating a custom template. The mapping engine **118** displays the map, and displays metrics data from the metrics server **112** as specified by the active template. In one embodiment, the end-user uses the mapping engine **118** to specify metrics data and optionally send the metrics data to the metrics server **112** from where it can be utilized by other end-users. Similarly, in one embodiment the end-user sends custom templates to the metrics server **112** from where the templates can be utilized by other end-users.

[0025] The network **114** represents the communication pathways between the map server **110**, metrics server **112**, and clients **116**. In one embodiment, the network **114** is the Internet. The network **114** can also utilize dedicated or private communications links that are not necessarily part of the Internet. In one embodiment, the network **114** carries traffic using standard communications technologies and/or protocols. Thus, the network **114** can include links using technologies such as Ethernet, 802.11, integrated services digital network (ISDN), digital subscriber line (DSL), asynchronous transfer mode (ATM), etc. Similarly, the networking protocols used by traffic on the network **114** can include multiprotocol label switching (MPLS), the transmission control protocol/Internet protocol (TCP/IP), the hypertext transport protocol (HTTP), the simple mail transfer protocol (SMTP), the file transfer protocol (FTP), etc. The data exchanged over the network **114** can be represented using technologies and/or formats including the hypertext markup language (HTML), the extensible markup language (XML), etc. In addition, all or some of links can be encrypted using conventional encryption technologies such as the secure sockets layer (SSL), Secure HTTP and/or virtual private networks (VPNs). In another embodiment, the entities can use custom and/or dedicated data communications technologies instead of, or in addition to, the ones described above.

II. System Architeture

[0026] FIG. **2** is a high-level block diagram illustrating a functional view of a computer **200** for use as one of the entities illustrated in the environment **100** of FIG. **1** according to one embodiment. Illustrated are at least one processor **202** coupled to a bus **204**. Also coupled to the bus **204** are a memory **206**, a storage device **208**, a keyboard **210**, a graphics adapter **212**, a pointing device **214**, and a network adapter **216**. A display device **218** is coupled to the graphics adapter **212**.

[0027] The processor **202** may be any general-purpose processor such as an INTEL 86 compatible-CPU. The storage device **208** is, in one embodiment, a hard disk drive but can also be any other device capable of storing data, such as a writeable compact disk (CD) or DVD, or a solid-state memory device. The memory **206** may be, for example, firmware, read-only memory (ROM), non-volatile random access memory (NVRAM), and/or RAM, and holds instructions and data used by the processor **202**. The pointing device **214** may be a mouse, track ball, or other type of pointing device, and is used in combination with the keyboard **210** to input data into the computer system **200**. The graphics adapter **212** displays images and other information on the display device **218**. The display device **218** is, for example, a LCD panel, a projector, a heads-up display for a